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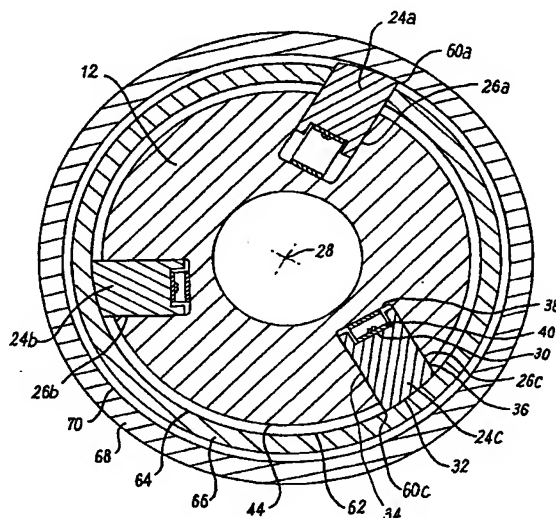
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[Continued on next page]

(54) Title: DUAL FUNCTION CLEANING TOOL



(57) Abstract: A cleaning tool and method of cleaning a liner top in a well bore. The tool includes cleaning elements, typically scrapers, which are arranged eccentrically to an axial bore through the tool. The elements are biased outwardly to contact an inner surface of a polished bore receptacle (PBR) at a position with a curvature to match the PBR and to present leading edges of each element when positioned at a surface of a neighbouring casing. The tool may further provide a top dress mill and act as a packer actuator sub. This provides a tool which performs a number of functions on a single trip in a well bore.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

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# INTERNATIONAL SEARCH REPORT

International Application No  
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A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 E21B37/02 E21B43/10

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 E21B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)  
EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 667 930 A (HILTON PAUL E ET AL) 2 February 1954 (1954-02-02) figures 1-5	1-13
Y	-----	14
X	US 2 756 968 A (VINCENT EMANUEL ET AL) 31 July 1956 (1956-07-31) column 3, lines 7-25; figures 1,3	1
Y	-----	14
Y	WO 02/35055 A (HOWLETT PAUL DAVID ; SPS AFOS GROUP LTD (GB)) 2 May 2002 (2002-05-02) page 7, line 33 - page 8, line 11; figures 1,3	
A	-----	1,11
	US 6 464 010 B1 (BROWN BILLY L) 15 October 2002 (2002-10-15) column 14, lines 7-50; figures 16,17	
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
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"&" document member of the same patent family

Date of the actual completion of the international search

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# INTERNATIONAL SEARCH REPORT

International Application No  
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2 203 966 A (OTIS HERBERT C) 11 June 1940 (1940-06-11) column 4, lines 14-39; figures 22-24 -----	1
A	WO 01/63087 A (EDDISON ALAN MARTYN ; ANDERGAUGE LTD (GB)) 30 August 2001 (2001-08-30) the whole document -----	1
P,A	US 6 546 581 B1 (CLUBB MATTHEW ET AL) 15 April 2003 (2003-04-15) paragraph [0035] paragraphs [0046] - [0056]; figures 7-14 -----	1

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB2004/001193

## Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-14

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14

Cleaning tool with eccentrically located elements  
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2. claims: 15-22

Method of cleaning a liner top  
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## INTERNATIONAL SEARCH REPORT

 International Application No  
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